



CBCS SCHEME

15CS744

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Seventh Semester B.E. Degree Examination, Feb./Mar. 2022

UNIX System Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What are the major differences between ANSIC and K and RC? Explain with example. (08 Marks)
- b. Write a C/C++ POSIX compliant program that print the POSIX defined configuration options supported on any given system using features test macro. (08 Marks)

OR

- 2 a. What are POSIX API? Explain the commonly occurring error status codes and their meaning. (08 Marks)
- b. Write C++ program to check and display the POSIX version constant of the system on which it is run. (04 Marks)
- c. What are POSIX standard? Explain different subsets of POSIX standards. (04 Marks)

Module-2

- 3 a. Explain the different file types available in UNIX or POSIX systems. (08 Marks)
- b. Explain UNIX Kernel support for files with neat diagram. (08 Marks)

OR

- 4 a. Explain following API along with prototypes.
i) open ii) write iii) stat iv) read. (08 Marks)
- b. Differentiate between hard links and symbolic links. (04 Marks)
- c. Explain device and FIFO file API's with prototype. (04 Marks)

Module-3

- 5 a. What are different ways for a process to terminate? Explain exit, - exit and at exit functions with prototypes. (06 Marks)
- b. Explain getrlimit and setrlimit function with prototype. Mention the three rules to change the resource limits. (06 Marks)
- c. Explain memory layout of a C program. (04 Marks)

OR

- 6 a. Explain the process invoked by init to allow terminal login. (05 Marks)
- b. Explain TELNET server execution process. (05 Marks)
- c. Explain process group and session. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. Define Signal. Mention the different sources of signal and list any four signals along with brief explanation write a program to setup signal handler for SIGALRM and SIGINT signal. (08 Marks)
- b. Explain the following functions :
i) sigprocmask
ii) sigaction (08 Marks)

OR

- 8 a. Define daemon processes. Explain characteristics of daemon process. (08 Marks)
- b. Briefly explain the Kill() API and the alarm() API. (08 Marks)

Module-5

- 9 a. What are pipes? What are their limitations? Write a program to send data from parent to child over a pipe. (08 Marks)
- b. What are FIFO? With a neat diagram, explain inter-process communication using FIFO. (08 Marks)

OR

- 10 a. Explain the concept of shared memory with an example C/C++ program. (08 Marks)
- b. What do you mean by processing field descriptors between processes? Explain. (08 Marks)
